

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Ulf Dietrich et al.

Serial No.: 10/551,108

Group Art Unit: 1796

Examiner: Doris L. Lee

Filed: July 11, 2006

For: DISPERSING AGENTS

Attorney Docket No.: WAS 0737 PUSA

**REPLY BRIEF UNDER 37 C.F.R. § 41.41**

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Commissioner for Patents  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Reply Brief is in response to the Examiner's Answer mailed on August 10, 2010 for the above-identified patent application.

First, the description of *Hirata's* copolymers which is found on pages 3 and 4 under **(9) Grounds of Rejection**, paragraph 1, is both misleading and disingenuous. For example, the Office calls out 2-methyl propane sulfonic acid (meth) acryl amide and (meth) allyl sulfonic acid as suggested monomers. First, these monomers are only optional, and second, they are enclosed in a shopping list of possible monomers which includes literally thousands of possibilities, many more when mixtures are considered. *Hirata* does not single out these possible comonomers, and his examples use only one comonomer when a comonomer is used at all, this comonomer being completely different (ethylmethacrylate, which contains no sulfonic acid group). See Appellants' discussion at pages 8 - 12 of the Appeal Brief.

Second, the characterization of component d) as being composed of oxyalkylene residues of C3 and C4 (propylene and butylene) suggests that these also are singled out by *Hirata*, which is incorrect. Both *Hirata's* component c) and component d) may contain only oxyethylene units, only oxypropylene units, only oxybutylene units, or any combinations thereof. The only distinction between *Hirata's* components c) and d) is their chain length: one must be short chain and one must be long chain. All of *Hirata's* examples include only long and short chain polyoxyethylene oligomers. No examples contains any oligomer with oxypropylene or oxybutylene units.

The Examiner contends that the slump properties of claim 23 are inherent. This is incorrect. First, inherency only applies to rejections under 35 U.S.C. § 102, not to rejections under 35 U.S.C. § 103(a). This is well established, unrefutable case law. See, e.g. *In re Shetty*, 566 F.2d 81 (CCPA 1977); *In re Naylor*, 369 F.2d 763 (CCPA 1966); and *In re Spormann*, 363 F.2d 444 (CCPA 1966). Moreover, Applicants have shown by their comparative example that other plasticizers which fall within the disclosure of *Hirata*, and indeed one close to his preferred embodiments, do not have the slump characteristics of claim 29. See page 14 of the Appeal Brief (Melflux® 1641).

Even if inherency would apply, the "inherent" feature must be necessarily present, not possibly present or even probably present. It must be present 100% of the time. See, e.g. *In re Robertson*, 169 F.3d 743 (Fed. Cir. 1999). *In re Spada*, cited by the Office, does not apply. In *Spada*, copolymers of the same three claimed monomers were exemplified in substantially the same molar proportions, and prepared by similar processes. That does not apply here, since *Hirata* never disclosed, nor did he teach or suggest Appellants' claimed dispersants. This is not a case where an identical composition is disclosed but a new property discovered. The compositions of Appellant are different from those of *Hirata*, and they have surprising and unexpected properties as well.

Regarding page 6 of the Answer and the rejection over *Hirata* and *Haerzschen*, the Office states that *Hirata* "teaches that the polymeric dispersant can be in an aqueous solution" (page 8, lines 3 - 20). *Hirata* makes no such teaching here. In the portion of *Hirata* cited by the Office, polymerization in solvent is suggested, water being among the solvents. There is no indication that the polymerization product is soluble in the polymerization solvent; only that the monomers are soluble. Moreover, this "solvent" nature cannot be used when polyoxypropylene-containing monomers are used, since these are insoluble in water, which is well known.

Secondly, *Hirata* does not teach or suggest that his polymers, much less the polymers of Appellant, could be used as a dispersant in spray drying of aqueous polymer dispersions. The only thing the "dispersants" of *Hirata* and the "dispersants" of Appellants have in common with respect to these claims, is that both are coined "dispersants." However, these are completely different. The "dispersants" of *Hirata* are cement dispersants, a term of art also commonly known as "plasticizers." They increase slump and workability in cementitious formulations. In contrast, the dispersants of claims 24 and 26 are spraying aids in spray drying of aqueous polymer dispersions, rendering the spray dried polymer redispersible. The only thing these have in common is the term used to cite them. Just as many English words have numerous definitions which are totally distinct, the same is the case here. Spray drying assistants "dispersants" are not plasticizers. They operate by building a water soluble cage around and between polymer particles during the spray drying process, which dissolves when the resulting redispersible polymer powder (RDP) is added to water, liberating the original particles. *Haerzschen* teaches the use of polyvinyl alcohols as spraying aids. There is no reason why one would substitute Appellants' dispersants for *Haerzschen's* spraying aids.

With regard to *Debus* (page 7 of Answer), *Debus* teaches plasticizing compositions which are completely different from those disclosed by *Hirata*, and yet considerably more different from those claimed by Appellants. In column 1 of *Debus*, *Debus* indicates that numerous other plasticizers, including some with sulfonic acid groups, are not

suitable, and proposes a specific combination of an anionic polyelectrolyte and a low-foaming non-ionic surfactant. There is no motivation to substitute the dispersant of *Hirata* for the polyelectrolyte and non-ionic dispersant of *Debus*.

With respect to *Okazaki*, it is again noted that no English translation of the underlying document has been submitted, as required.

With regard to the Office's comments on pages 8 - 15, it is noted that first, the "finite" number of possibilities required by *KSR* does not simply require that a number be identified. The number  $1.2 \times 10^{30}$  is a finite number. That is not what *KSR* means. *KSR* means a small, defined number. It is noted that the Federal Circuit remanded a case where the finite number of possibilities was 6 rather than the 3 cited by the Office. *Hirata* never disclosed any polymer of Appellants, and when the myriad of possibilities is considered for each of the four monomer classes of *Hirata*, the number of possibilities is not finite in the *KSR* sense, but simply enormous.

From the enormous number of possibilities, *Hirata* does not direct the skilled artisan to Appellants' invention. One skilled in the art, reading *Hirata*, would not be directed to Appellants' invention. *Hirata* does not single out the combination of all monomers required, and erects no "sign posts" to the skilled artisan to direct that skilled person to Applicants' invention. Thus, the invention is non-obvious.

With respect to "criticality" of unexpected results in Appellants' comparative showings, it is noted that such criticality is only required when the invention and the prior art are close. *Hirata* simply does not teach or suggest the claimed invention. Moreover, *Hirata* does not even mention obtaining a casein-mimic, the thrust of Appellants' entire invention, and thus clearly does not suggest how this could be achieved. A reference which does not mention the problem addressed cannot suggest a solution, and does not render an invention obvious. *In re*

*Shaffer*, 229 F.2d 476 (CCPA 1956). The comparative examples show that a dispersant within the teachings of *Hirata* (Melflux 1641) does not even come close to providing the benefits of the claimed invention. No further comparative showings are believed necessary, especially in view of the fact that *Hirata* does not direct the skilled artisan to the claimed invention anyway.

Reversal of all rejections of record is respectfully solicited.

Respectfully submitted,

**Ulf Dietrich et al.**

By:

  
William G. Conger  
Registration No. 31,209  
Attorney/Agent for Applicant

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**BROOKS KUSHMAN P.C.**  
1000 Town Center, 22nd Floor  
Southfield, MI 48075-1238  
Phone: 248-358-4400  
Fax: 248-358-3351